

Cancer Mortality in San Francisco

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FOR the purposes of this review of cancer mortality in San Francisco, statistical data have been assembled from 1940 through 1945, one full year in the pre-war era, and the remaining five years in the war period when a changing population showed a resultant effect on local factors involved in any analysis of these data.

Since death certificates are the only source of information available on cancer incidence, many items of statistical importance may not be included. However, from such detail as has been tabulated some more or less interesting results have been obtained.

Of first importance, and on the brighter side of the picture, is the apparently declining cancer mortality rate in this period. While to a certain extent this is due to increases in population within the war years, and to the fact that these increases were in the younger age groups where the frequency of cancer is not so great, due credit must be given to the effectiveness of early diagnosis and surgical procedures in the treatment of cancer cases.

MORTALITY RATES

Year	Total	Rate Per 100,000 Population	Rate Adjusted for Residence in California Only†
1940	1,462	230.2	201.6
1941	1,474	232.1	198.6
1942	1,441	198.8	166.3
1943	1,491	192.4	161.7
1944	1,574	203.1	163.0
1945	1,661	200.7	167.0

† Under a reciprocal arrangement with the State Department of Health, an exchange of certificates of non-residents is effected.

In the analysis of age distribution, there is not much to support the often-expressed opinion that cancer is occurring with greater frequency in the younger age groups. While the accompanying tables may indicate a slight trend in this direction, there is not enough evidence to substantiate a positive statement to this effect. Note the cumulative per cents for those groups under 45 years.

At intervals ten years apart, the average age was found and tabulated for male, female, and total groups. Within 20 years, the average age for total cancer deaths increased from 58 to 60 years. Apparently here again has been proven the effective-

AGE DISTRIBUTION

1935			
Age	Total	Per Cent Group	Cumulative Per Cent
Under 25	12	1.0	...
25-29	9	0.7	1.7
30-34	19	1.6	3.3
35-44	102	8.5	11.8
45-54	247	20.6	32.4
55-64	347	29.0	61.4
65 and over	462	38.6	100.0
Total	1,198		

* Director of Public Health, City and County of San Francisco.

1940			
Age	Total	Per Cent Group	Cumulative Per Cent
Under 25	11	0.8	...
25-29	9	0.6	1.4
30-34	24	1.6	3.0
35-44	108	7.4	10.4
45-54	276	18.9	29.3
55-64	416	28.4	57.7
65 and over	618	42.3	100.0
Total	1,462		

1945			
Age	Total	Per Cent Group	Cumulative Per Cent
Under 25	35	2.1	...
25-29	24	1.4	3.5
30-34	25	1.5	5.0
35-44	130	7.8	12.8
45-54	298	18.0	30.8
55-64	460	27.7	58.5
65 and over	689	41.5	100.0
Total	1,661		

ness of early diagnosis, the use of radium and other therapeutic agents and operative procedures.

Unfortunately, a statement regarding possible surgery in cancer cases does not always appear on death certificates. From those cases reported, it is safe to say that operations are performed in about 33 per cent of the cases.

AVERAGE AGE AT DEATH

	Male	Female	Total
1925	57.6	59.0	58.2
1935	60.2	58.3	59.3
1945	60.4	60.4	60.4

Not all communities are prepared in their local hospitals to take adequate care of cancer patients. Perhaps that is the reason so many non-residents avail themselves of services offered in a medical center like San Francisco. Note in the following tabulation that for the past six years an average of nearly one-fourth of the non-resident deaths have been cancer cases.

CANCER MORTALITY—NON-RESIDENTS

Year	Total	Per Cent of Total Non-Resident Deaths	Per Cent of Total Cancer Deaths
1940	294	26	20
1941	279	23	19
1942	266	22	18
1943	269	21	18
1944	342	26	23
1945	321	23	19

Record as to the types of cancer has been omitted in the study of death certificates. However, this information has been given in full detail in the attached morbidity report furnished by the Record Room at San Francisco Hospital. Certain other facts of interest are noted in this report. In the four-year period covered by these tabulations, it is noted that about 4 per cent of the total discharges from the San Francisco Hospital and about 12½ per cent of the deaths occurring there are cancer cases. This is probably as fair an indication of cancer morbidity as is available from any source

to which the San Francisco Department of Public Health has access. Of the 3,132 tumors found, 939, or 30 per cent, were surgically treated. This compares favorably with the findings on death records regarding operations. Another feature of interest is the stage of development. The large number of primary tumors treated before metastasis occurs is definitely significant of the value of early diagnosis and improved methods of treatment. Surely a more intensive educational program in the community on the dangers of delay is indicated.

It is gratifying to have available for statistical purposes such tabulated data as have been fur-

nished in the accompanying report from the Record Room of San Francisco Hospital.

The following tables have been compiled from the Hospital Disease Index. These data represent the types of new growths diagnosed and their location in the body. During the four-year period tabulated, 3,132 tumors were found in 2,373 patients, indicating the involvement of more than one organ or system of the body in many patients.

Attention is called to the data tabulated on the "endocrine system." Most new growths in this group are diagnosed anatomically as shown by the large number of cases during the period the autopsies have been indexed, 6-30-42 through 10-30-44.

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Total Number of Patients Discharged, Number of Deaths and Gross Death Rate with Comparative Data on Tumor Patients Discharged

Year	Total Hospital Discharges*	7-1-42 through 6-30-46				
		Total Hospital Deaths	Gross Death Rate Per 100 Cases	Total Tumor Patients Discharged	Tumor Deaths	Gross Death Rate Per 100 Cases
7-1-42 to 6-30-43	14,621	1,839	12.6	589	230	39.0
7-1-43 to 6-30-44	13,482	1,672	12.4	489	189	38.6
7-1-44 to 6-30-45	14,850	1,793	12.1	580	236	40.7
7-1-45 to 6-30-46	16,315	1,992	12.2	715	265	37.1
Total	59,268	7,296	12.3	2,373	920	38.8

* Includes Deaths.

Year	Total Number New Growths	Total Deaths	Stage of Development		
			Primary Only	Primary with Metastasis	Metastatic Only
7-1-42 to 6-30-43	921	482	638	112	171
7-1-43 to 6-30-44	793	455	545	127	121
7-1-44 to 6-30-45	695	342	461	105	129
7-1-45 to 6-30-46	723	280	470	150	103
Total	3,132	1,559	2,114	494	524

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New Growths Diagnosed in Patients Discharged from San Francisco Hospital by Location, Sex, Age Groups, Stage of Development, Treatment and End-Results.

7-1-42 through 6-30-46																			
Year and Site of New Growth	Total All Groups	Male Age Groups						Female Age Groups						Stage of Development				Results	
		0-24	25-34	35-44	45-54	55-64	65 & Over	0-25	25-34	35-44	45-54	55-64	65 & Over	Primary Only	Primary with static Metas.	Surg. with static Treat. Only	Died	Recovered	
Body as a Whole																			
7-1-42 to 6-30-43*	76	..	..	7	5	29	10	..	2	2	15	11	12	6	..	70	13	51	25
7-1-43 to 6-30-44*	51	..	..	2	3	12	9	1	..	3	3	6	12	3	2	46	11	43	8
7-1-44 to 6-30-45*	54	1	3	4	3	2	9	..	4	2	4	5	17	8	2	44	7	43	11
7-1-45 to 6-30-46..	54	1	..	1	4	3	7	1	1	6	5	12	13	14	1	39	11	31	23
Totals.....235 2 3 14 15 29 35 2 7 13 27 34 54 31 5 199 42 168 67																			
Integumentary System (including subcutaneous areolar tissue, mucous membranes of orifices and the breast).																			
7-1-42 to 6-30-43*	106	..	1	3	3	6	20	..	2	11	19	16	25	74	30	2	19	45	61
7-1-43 to 6-30-44*	56	..	..	2	..	1	9	4	1	5	9	6	19	36	18	2	17	14	42
7-1-44 to 6-30-45*	54	..	..	1	..	2	8	1	3	5	6	8	20	35	18	1	13	21	33
7-1-45 to 6-30-46..	82	2	..	1	4	2	13	2	2	7	7	9	33	49	32	1	27	29	53
Totals.....298 2 1 7 7 11 50 7 8 28 41 39 97 194 98 6 76 109 189																			
Musculoskeletal System																			
7-1-42 to 6-30-43*	18	2	2	1	4	1	..	..	..	2	2	3	1	5	2	11	4	5	13
7-1-43 to 6-30-44*	13	..	..	..	..	1	6	..	..	..	2	1	3	5	1	7	2	8	5
7-1-44 to 6-30-45*	19	1	..	4	..	2	6	..	1	..	1	2	2	8	1	10	5	12	7
7-1-45 to 6-30-46..	14	1	..	..	1	2	3	3	..	1	1	1	1	7	3	4	5	2	12
Totals.....64 4 2 5 5 6 15 3 1 3 6 7 7 25 7 32 16 27 37																			

* New growths diagnosed by autopsy only are included from July, 1942, through October, 1944.

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New Growths Diagnosed in Patients Discharged from San Francisco Hospital by Location, Sex, Age Groups, Stage of Development, Treatment and End-Results.

7-1-42 through 6-30-46																	Stage of Development				Results	
Year and Site of New Growth	Total All Groups	Male Age Groups							Female Age Groups							Pri- mary Only	Pri- mary with Metas.	Meta- static Only	Surg. Treat- ed	Died	Recov- ered	
		0-24	25-34	35-44	45-54	55-64	65 & Over	0-24	25-34	35-44	45-54	55-64	65 & Over									
Respiratory System																						
7-1-42 to 6-30-43*	88	1	2	14	21	23	14	2	..	..	2	3	6	50	27	11	25	49	39	
7-1-43 to 6-30-44*	78	..	..	..	2	21	22	23	2	1	1	1	3	2	49	14	15	25	54
7-1-44 to 6-30-45*	88	2	1	9	7	16	23	..	1	1	5	6	17	47	19	22	17	53				
7-1-45 to 6-30-46..	62	..	..	8	8	20	11	1	2	3	3	1	5	42	13	7	21	39		
Totals.....		316	3	3	33	57	81	71	5	4	5	11	13	30	188	73	55	88	121			
Cardiovascular System																						
7-1-42 to 6-30-43*	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..
7-1-43 to 6-30-44*	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..
7-1-44 to 6-30-45*	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..
7-1-45 to 6-30-46..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals.....		3	..	..	..	..	1	1	..	1	..	..	..	..	..	3	..	3	..
Hemic & Lymphatic Systems																						
7-1-42 to 6-30-43*	35	..	..	1	3	4	14	..	1	1	3	2	6	17	1	17	11	20	15	
7-1-43 to 6-30-44*	18	1	..	1	5	1	4	..	..	..	..	..	6	10	..	8	5	9	9
7-1-44 to 6-30-45*	18	1	..	1	2	2	2	..	2	1	1	3	3	10	1	7	4	9	9			
7-1-45 to 6-30-46..	18	..	..	1	..	5	4	..	..	..	2	1	5	3	..	15	9	4	14
Totals.....		89	2	..	4	10	12	24	..	3	2	6	6	20	40	2	47	29	47			
Digestive System																						
7-1-42 to 6-30-43*	212	3	2	8	23	32	68	1	2	1	17	18	37	155	28	29	69	131	181			
7-1-43 to 6-30-44*	247	..	4	10	20	49	106	..	2	1	9	10	36	165	59	23	65	170	77			
7-1-44 to 6-30-45*	187	2	1	7	20	34	61	1	2	2	13	13	31	121	46	20	57	103	84			
7-1-45 to 6-30-46..	206	..	..	9	19	55	61	2	1	2	8	21	28	127	61	18	57	96	110	
Totals.....		852	5	7	34	82	170	296	4	7	6	47	62	132	568	194	90	248	500			
Urogenital System																						
7-1-42 to 6-30-43*	297	..	..	3	3	15	81	6	31	51	36	30	41	260	21	16	110	114	183	
7-1-43 to 6-30-44*	248	..	..	3	6	15	63	6	29	38	32	21	35	212	32	4	101	100	148	
7-1-44 to 6-30-45*	209	1	1	3	1	11	48	7	23	44	22	13	35	185	18	6	90	58	151			
7-1-45 to 6-30-46..	240	..	1	4	4	15	53	10	39	32	34	16	32	205	30	5	91	63	177			
Totals.....		994	1	2	13	14	56	245	29	122	165	124	80	143	862	101	31	392	335			
Endocrine System																						
7-1-42 to 6-30-43*	50	..	..	3	3	9	12	..	..	2	8	2	11	50	..	..	6	45	5
7-1-43 to 6-30-44*	45	..	1	3	2	5	16	1	1	3	4	3	6	42	1	2	4	38	7			
7-1-44 to 6-30-45*	23	..	..	..	2	4	7	..	1	2	3	..	4	20	..	3	3	19	4
7-1-45 to 6-30-46..	5	..	..	..	..	1	1	1	..	1	1	..	..	5	..	..	1	..	5
Totals.....		123	..	1	6	7	19	36	2	2	8	16	5	21	117	1	5	14	21			
Nervous System																						
7-1-42 to 6-30-43*	20	1	1	4	6	1	..	..	..	5	1	..	1	17	3	..	7	13	7
7-1-43 to 6-30-44*	24	1	3	2	3	3	1	..	2	2	3	2	2	20	..	4	6	12	12			
7-1-44 to 6-30-45*	28	1	..	5	3	2	2	1	1	1	8	4	..	25	..	3	6	17	11			
7-1-45 to 6-30-46..	26	3	..	4	1	3	2	1	5	2	1	..	4	16	9	1	6	13	13			
Totals.....		98	6	4	15	13	9	5	2	8	10	13	6	7	78	12	8	25	43			
Organs of Special Senses																						
7-1-42 to 6-30-43*	4	..	..	..	..	2	..	..	..	1	..	..	1	4	..	..	1	..	4
7-1-43 to 6-30-44*	3	..	1	..	1	..	1	..	..	..	..	..	..	3	..	..	3	..	3
7-1-44 to 6-30-45*	4	..	..	..	..	1	1	..	..	..	..	..	2	2	..	2	2	1	3
7-1-45 to 6-30-46..	7	..	..	1	..	2	2	..	..	..	2	..	..	2	1	4	3	..	7
Totals.....		18	..	1	1	1	5	4	..	..	1	2	..	3	11	1	6	9	17	
Unknown Primary Site, Type Undiagnosed																						
7-1-42 to 6-30-43*	14	..	..	..	..	6	4	..	..	..	1	..	3	..	..	14	..	8	6
7-1-43 to 6-30-44*	9	..	..	..	1	..	3	..	..	1	1	..	3	..	..	9	..	6	3
7-1-44 to 6-30-45*	10	..	..	..	1	2	3	1	..	..	1	1	1	..	..	10	..	5	5
7-1-45 to 6-30-46..	9	..	..	..	..	2	4	..	..	..	..	2	1	..	..	9	..	3	6
Totals.....		42	..	..	..	2	10	14	1	..	1	3	3	8	..	..	42	..	22

* New growths diagnosed by autopsy only are included from July, 1942, through October, 1944.

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Type of New Growth by Year and Site, Sex, Stage of Development and End-Results.

7-1-42 through 6-30-46

Type of New Growth										Stage of Development				Results	
Year and Site of New Growth	Total	Male	Sex Female	(See Key at End of Table)						Pri- mary Only	Pri- mary with Metas.	Meta- static Only	Died	Recov- ered	
A	B	C	D	E	F	G	H								
Body as a Whole**															
7-1-42 to 6-30-43*... 76	34	42	4	..	..	67	1	1	2	1	6	..	70	51	25
7-1-43 to 6-30-44*... 51	26	25	5	..	..	45	..	..	1	..	3	2	46	43	8
7-1-44 to 6-30-45*... 54	22	32	9	..	1	39	..	..	4	1	8	2	44	43	11
7-1-45 to 6-30-46*... 54	16	38	15	5	..	30	..	..	4	..	14	1	39	31	23
Total.....235	98	137	33	5	1	181	1	1	11	2	31	5	199	168	67
Integumentary System (Including subcutaneous areolar tissue, mucous membranes of orifices and the breast)															
7-1-42 to 6-30-43*...106	33	73	15	..	..	86	3	..	2	..	74	30	2	45	61
7-1-43 to 6-30-44*... 56	12	44	8	..	..	44	4	..	..	..	36	18	2	14	42
7-1-44 to 6-30-45*... 54	11	43	7	..	..	47	..	..	..	..	35	18	1	21	33
7-1-45 to 6-30-46*... 82	22	60	7	..	..	70	1	..	3	1	49	32	1	29	53
Total.....298	78	220	37	..	..	247	8	..	5	1	194	98	6	109	189
Musculoskeletal System															
7-1-42 to 6-30-43*... 18	10	8	6	..	..	11	..	..	1	..	5	2	11	5	13
7-1-43 to 6-30-44*... 13	7	6	4	..	..	9	..	..	..	..	5	1	7	8	5
7-1-44 to 6-30-45*... 19	13	6	8	..	..	11	..	..	..	..	8	1	10	12	7
7-1-45 to 6-30-46*... 14	7	7	7	..	2	4	..	..	1	..	7	3	4	2	12
Total..... 64	37	27	25	..	2	35	..	..	2	..	25	7	32	27	37
Respiratory System															
7-1-42 to 6-30-43*... 88	75	13	4	1	..	81	..	..	2	..	50	27	11	49	39
7-1-43 to 6-30-44*... 78	68	10	4	..	..	73	..	..	1	..	49	14	15	54	24
7-1-44 to 6-30-45*... 88	58	30	5	..	..	82	..	..	1	..	47	19	22	53	35
7-1-45 to 6-30-46*... 62	47	15	2	..	..	59	..	..	1	..	42	13	7	39	23
Total.....316	248	68	15	1	..	295	..	..	5	..	188	73	55	195	121
Cardiovascular System															
7-1-42 to 6-30-43*... 1	1	..	1	..	..	..	..	..	..	..	..	..	1	1	..
7-1-43 to 6-30-44*... 1	..	1	..	..	..	1	..	..	..	..	..	..	1	1	..
7-1-44 to 6-30-45*... 1	1	..	..	..	..	1	..	..	..	..	..	..	1	1	..
7-1-45 to 6-30-46*... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total..... 3	2	1	1	..	..	2	..	..	..	..	..	..	3	3	..
Hemic & Lymphatic Systems															
7-1-42 to 6-30-43*... 35	22	13	16	..	..	19	..	..	..	..	17	1	17	20	15
7-1-43 to 6-30-44*... 18	12	6	10	..	..	7	..	..	1	..	10	..	8	9	9
7-1-44 to 6-30-45*... 18	8	10	11	..	..	7	..	..	..	..	10	1	7	9	9
7-1-45 to 6-30-46*... 18	10	8	3	..	..	15	..	..	..	..	3	..	15	4	14
Total..... 89	52	37	40	..	..	38	..	..	1	..	40	2	47	42	47
Digestive System															
7-1-42 to 6-30-43*...212	136	76	13	..	..	185	..	1	9	4	155	28	29	131	181
7-1-43 to 6-30-44*...247	189	58	12	..	..	226	..	..	8	1	165	59	23	170	77
7-1-44 to 6-30-45*...187	125	62	4	..	..	176	1	..	6	..	121	46	20	103	84
7-1-45 to 6-30-46*...206	144	62	4	..	..	197	2	..	3	..	127	61	18	96	110
Total.....852	594	258	33	..	..	784	3	1	26	5	568	194	90	500	352
Urogenital System															
7-1-42 to 6-30-43*...297	102	195	80	..	2	205	5	4	..	1	260	21	16	114	183
7-1-43 to 6-30-44*...248	87	161	86	1	..	154	2	2	1	2	212	32	4	100	148
7-1-44 to 6-30-45*...209	65	144	68	..	4	124	..	4	2	7	185	18	6	58	151
7-1-45 to 6-30-46*...240	77	163	66	..	3	152	6	8	1	4	205	30	5	63	177
Total.....994	331	663	300	1	9	635	13	18	4	14	862	101	31	335	659
Endocrine System															
7-1-42 to 6-30-43*... 50	27	23	..	..	..	50	..	..	..	..	50	..	..	45	5
7-1-43 to 6-30-44*... 45	27	18	..	..	..	45	..	..	..	..	42	1	2	38	7
7-1-44 to 6-30-45*... 23	13	10	1	..	..	22	..	..	..	..	20	..	3	19	4
7-1-45 to 6-30-46*... 5	2	3	..	..	..	5	..	..	..	..	5	..	..	..	5
Total.....123	69	54	1	..	..	122	..	..	..	..	117	1	5	102	21
Nervous System															
7-1-42 to 6-30-43*... 20	13	7	13	..	..	3	..	..	4	..	17	3	..	13	7
7-1-43 to 6-30-44*... 24	13	11	13	..	..	4	..	..	7	..	20	..	4	12	12
7-1-44 to 6-30-45*... 23	13	15	10	..	..	5	1	..	12	..	25	..	3	17	11
7-1-45 to 6-30-46*... 26	13	13	14	..	..	2	..	1	8	1	16	9	1	13	13
Total..... 98	52	46	50	..	..	14	1	1	31	1	78	12	8	55	43

* New growths diagnosed by autopsy only are included from July, 1942, through October, 1944.

** Includes generalized carcinomatosis and new growths with metastases to more than three body organs.

(Table Continued on Next Page)

Type of New Growth by Year and Site, Sex, Stage of Development and End-Results.

7-1-42 through 6-30-46																	
Year and Site of New Growth		Total	Sex Male Female		Type of New Growth (See Key at End of Table)							Stage of Development			Results		
					A	B	C	D	E	F	G	H	Primary Only	Primary with static Metas. Only	Died	Recovered	
Organs of Special Senses																	
7-1-42 to 6-30-43*	...	4	2	2	..	..	..	4	..	..	..	..	4	..	..	..	4
7-1-43 to 6-30-44*	...	3	3	..	..	..	..	2	..	..	..	1	3	..	..	..	3
7-1-44 to 6-30-45*	...	4	2	2	..	..	..	4	..	..	..	..	2	..	2	1	3
7-1-45 to 6-30-46	7	5	2	2	..	..	5	..	..	..	..	2	1	4	..	7
Total.....		18	12	6	2	..	..	15	..	..	..	1	11	1	6	1	17
Unknown Primary Site, Type Undiagnosed																	
7-1-42 to 6-30-43*	...	14	10	4	..	..	..	2	..	..	12	..	..	..	14	8	6
7-1-43 to 6-30-44*	...	9	4	5	..	..	..	4	..	..	4	..	..	..	9	6	3
7-1-44 to 6-30-45*	...	10	6	4	..	..	..	2	..	..	8	..	..	..	10	5	5
7-1-45 to 6-30-46	9	6	3	..	..	..	7	..	..	2	..	..	..	9	3	6
Total.....		42	26	16	..	..	..	15	..	..	26	..	..	..	42	22	20

* New growths diagnosed by autopsy only are included from July, 1942, through October, 1944.

Key: A Nonepithelial neoplasms.

B Neoplasm derived from a serous surface, a joint cavity or a lymph node.

C Neoplasms arising from fetal anlage of an organ (including neoplasm arising from an aberrant anlage).

D Epithelial neoplasms.

E Combined epithelial and nonepithelial neoplasms; mixed neoplasms.

F Teratoma.

G Unclassified neoplasms.

H Hyperplasias of neoplastic significance.

